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(54) **SLUICE SUPPORT**

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E02B 8/04	(2006.01)
B03B 5/26	(2006.01)
E02D 27/52	(2006.01)
E02D 27/50	(2006.01)

(52) **U.S. Cl.**

CPC ***E02D 27/52*** (2013.01); ***B03B 5/26*** (2013.01); ***E02B 8/023*** (2013.01); ***E02B 8/04*** (2013.01); ***E02D 27/50*** (2013.01)

(58) **Field of Classification Search**

CPC B03B 5/00; B03B 5/26

See application file for complete search history.

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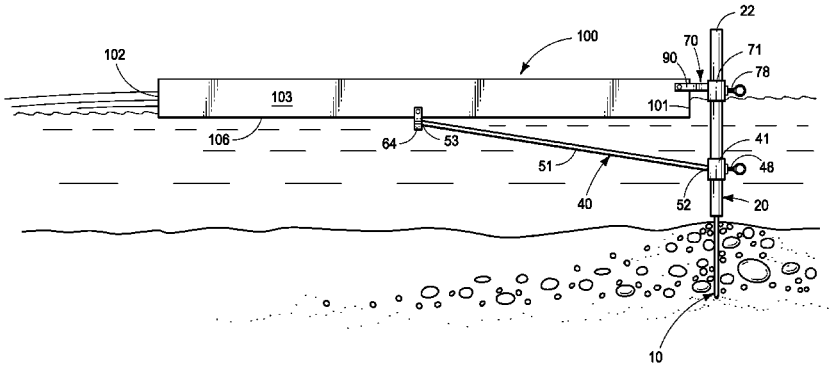
(57) **ABSTRACT**

A sluice support for positionally supporting a sluice box within a waterway provides an anchor post, an axially and rotatably movable slide hammer and two adjustably positionable support frames releasably engageable with the slide hammer to adjustably support a sluice box within a waterway.

9 Claims, 4 Drawing Sheets



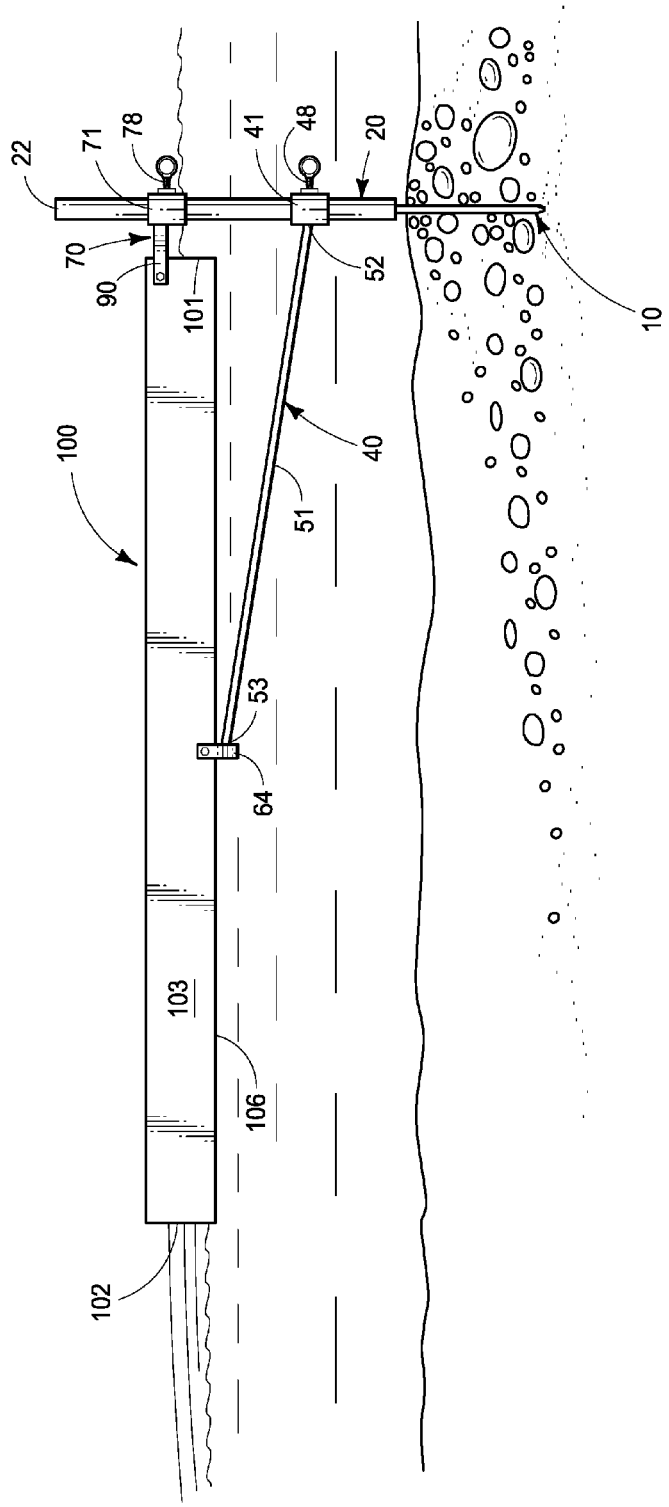


FIG. 1

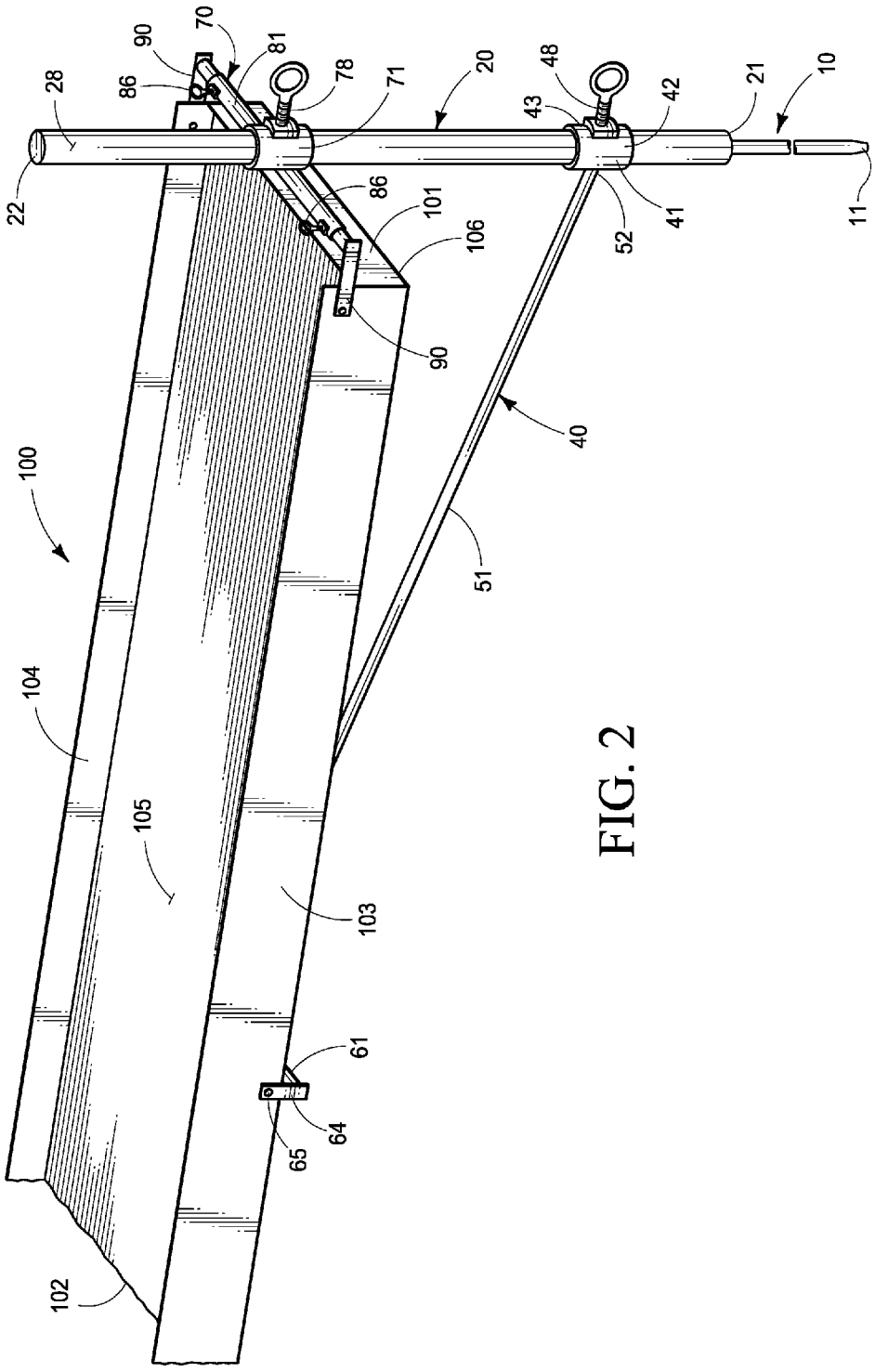

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FIG. 2

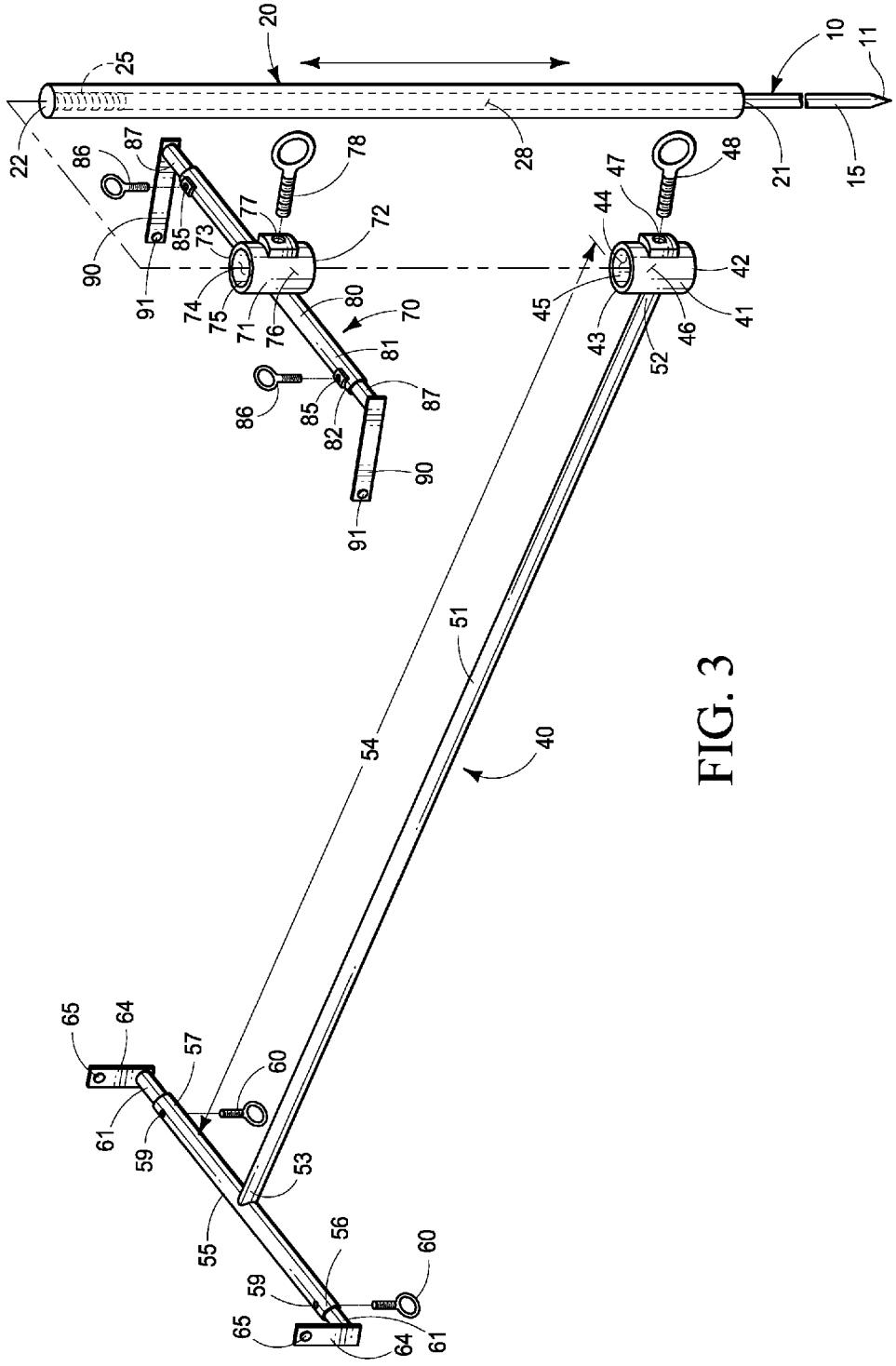
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FIG. 3

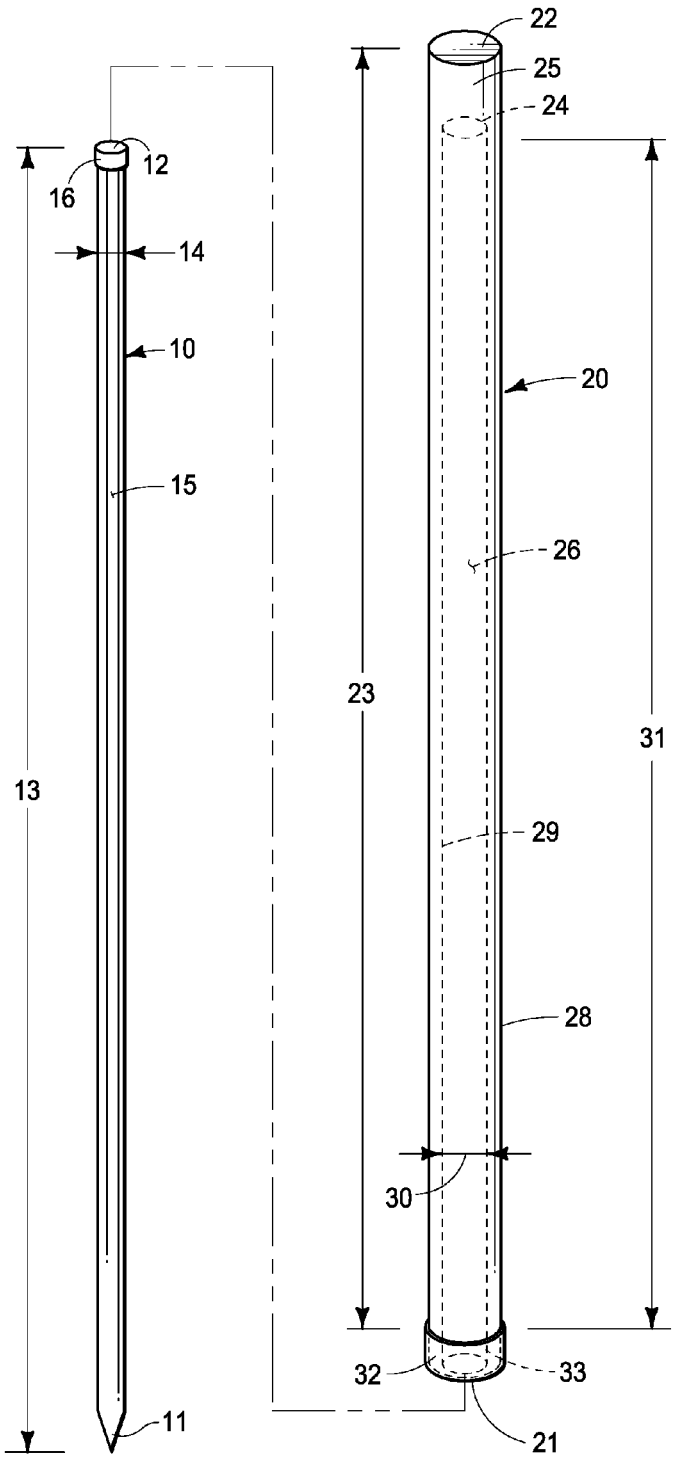

FIG. 4

SLUICE SUPPORT

RELATED APPLICATIONS

There are no patent applications related hereto filed in the United States, nor in any foreign country.

BACKGROUND OF INVENTION

Field of Invention

The present invention relates generally to the field of placer mining, and more specifically relates to an infinitely adjustable support for a sluice box to positionally maintain a sluice box in a waterway at an optimal orientation and angulation.

Background and Description of the Related Art

The purpose of a gold sluice is to separate heavier gold bearing materials from placer sand and gravel. The separation is accomplished by use of flowing water through the sluice. By placing an amount of placer gravel and sand materials at an upper end of the sluice, and utilizing water flowing over a series of riffles on the sluice, the heavier gold bearing materials are separated out of the slurry. This is accomplished by the heavier materials collecting in a low-pressure eddy area behind the riffle devices.

In order for optimum separation to take place, it is necessary for the flow of water over, and through the sluice to be accurately controlled. Present practice by prospectors in the field has been to set the sluice box into a flowing stream or waterway and thereafter adjust to the position, orientation and particularly the angulation of the sluice box using rocks, stones and whatever materials are locally available. This process is difficult and time-consuming and requires alteration of the stream/waterway because large rocks and stones must be used to support the sluice box as desired. Such use of rocks, stones and local materials is difficult and time-consuming and is never overly precise. Further, because the water level in such creeks and waterways varies, the height adjustability is minimal and difficult, and maintaining the sluice box in a level orientation is particularly difficult because quantities of heavy placer gravel and sand and rocks are repeatedly shoveled onto the upper surface of the sluice box. Therefore not only is elongate support to accurately maintain the front to rear angulation important and difficult, but rotational support of the sluice box is also necessary and difficult to maintain. As a result, most sluice boxes cannot be consistently operated in an optimum fashion.

There is therefore a continuing need for a means and apparatus to quickly and easily and accurately adjust the position, angulation and support for a sluice box for prospecting operations. Further, there is a need for such an apparatus that does not require physical alteration of the stream/waterway and the flow of water therethrough, and the support means needs to be easily removable and transportable.

Some or all of the problems, difficulties and drawbacks identified above and other problems, difficulties, and drawbacks may be helped or solved by the inventions shown and described herein. My invention may also be used to address other problems, difficulties, and drawbacks not set out above or which are only understood or appreciated at a later time. The future may also bring to light currently unknown or unrecognized benefits which may be appreciated, or more fully appreciated, in the future associated with the novel inventions shown and described herein.

BRIEF SUMMARY OF THE INVENTION

A sluice support for positionally supporting a sluice box within a waterway provides an anchor post, an axially and rotatably movable slide hammer and two adjustably positionable support frames releasably engageable with the slide hammer to adjustably support a sluice box within a waterway.

A first aspect of the instant invention is a sluice support having an anchor post with a soil penetrating first end and an opposing second end, the anchor post further having an outwardly facing surface and a length between the first end and the second end; a slide hammer axially and rotatably engageable with the anchor post, the slide hammer having an open first end, an opposing closed second end, a hammer mass, an outwardly facing surface and a length between the open first end and the closed second end. The slide hammer further defines an axial medial channel communicating with the open first end and extending partially along the length toward the closed second end. A first support frame having a collar defining a medial channel through which the slide hammer axially extends, an extension arm extending angularly radially from the collar, and wherein the extension arm has an end distal from the collar. A cross arm carried at the end distal from the collar, the cross arm having a first end and a second end with a medial channel extending therebetween, each end carrying a telescoping width adjustable rod having a sluice fastening plate for attachment to opposing side portions of the sluice box. A second support frame having a collar defining a medial channel through which the slide hammer axially extends and a cross arm carried on an outer circumferential surface of the collar extending generally perpendicular to the medial channel, the cross arm having a first end and a second end with a medial channel extending therebetween, each end of the cross arm carrying a telescoping width adjustable rod having a sluice fastening plate for attachment to opposing side portions of the sluice box proximate the first end of the sluice box.

A second aspect of the present invention is a sluice support having a fastener carried by the first support frame collar and a fastener carried by the second support frame collar, and the fasteners positionally secure the first support frame collar and the second support frame collar to an outwardly facing surface of the slide hammer.

A third aspect of the present invention is a sluice support wherein the first support frame collar fastener and the second support frame collar fastener engage with an outwardly facing surface of the anchor post.

A fourth aspect of the present invention is a sluice support wherein the first support frame collar is adjustably positionable relative to the open first end and closed second end of the slide hammer and the second support frame collar is adjustably positionable relative to the open first end and closed second end of the slide hammer and a distance between the first support frame collar and the second support frame collar adjusts angulation of the sluice box in the waterway and volume of water flowing along and over and through the sluice box.

A fifth aspect of the present invention is a sluice support wherein the slide hammer is axially rotatable relative to the anchor post.

A sixth aspect of the present invention is a sluice support having an anchor post for releasably and adjustably anchoring the sluice support in a waterway, the anchor post having

a soil penetrating first end and a second end with a length between the soil penetrating first end and the second end and further having an outer circumferential surface. A slide hammer slidably axially engageable with the anchor post, the slide hammer having an open first end, a closed second end, a length between the open first end and the closed second end and having a hammer mass, the slide hammer further defining an axially aligned medial channel communicating with the open first end and extending partially along the length toward the closed second end, the slide hammer further having an outwardly facing surface. A first support frame adjustably positionally engageable with the slide hammer, the first support frame having an adjustably positionable collar defining a medial channel through which the slide hammer axially extends, the adjustably positionable collar having an extension arm extending angularly and generally radially from the collar. The extension arm has a first end communicating with an outer circumferential surface of the collar, and a second end distal from the collar, and a cross arm carried at the second end of the extension arm that extends general perpendicularly to the collar medial channel. The cross arm has a first end and a second end and a defines a medial channel communicating therebetween, the first end and the second end each carrying a telescoping width adjustable rod having a sluice fastening plate at one end thereof for attachment to opposing side portions of the sluice box. A second support frame adjustably positionally engageable with the slide hammer, the second support frame having an adjustably positionable collar defining a medial channel through which the slide hammer axially extends and wherein the collar has a cross arm carried on an outer circumferential surface of the collar that extends generally perpendicularly to the collar medial channel, the cross arm having a first end and a second end and defining a medial channel communicating therebetween, and the first end and the second end of the cross arm each carrying a telescoping width adjustable rod having a sluice fastening plate at one end thereof for attachment to opposing side portions of the sluice box proximate the first end of the sluice box.

Other and further aspects of my invention will appear from the following specification and accompanying drawings which form a part hereof. In carrying out the aspects and objects of my invention it is to be understood that its structures and features and steps are susceptible to change in design and arrangement and order with only one embodiment being illustrated in the accompanying drawings and specified as is required.

BRIEF DESCRIPTION OF THE DRAWING

Disclosed forms, configurations, embodiments and/or diagrams relating to and helping to describe aspects and versions of my invention are explained and characterized herein, often with reference to the accompanying drawings. The drawings and features shown herein also serve as part of the disclosure of my invention, whether described in text or merely by graphical disclosure alone. The drawings are briefly described below.

FIG. **1** is an orthographic side view of my sluice support anchored in a waterway and supporting a sluice box within the waterway allowing the water to flow over, around and through the sluice box.

FIG. **2** is an enlarged isometric top, first end and side view of the sluice support supporting a sluice box.

FIG. **3** is an exploded isometric top, first end and side view of the sluice support showing arrangement of the components.

FIG. **4** is an enlarged isometric top and side view of the anchor post and slide hammer showing the medial channel defined by the slide hammer.

DETAILED WRITTEN DESCRIPTION

Introductory Notes

The readers of this document should understand that dictionaries were used in the preparation of this document. Widely known and used in the preparation hereof are *The American Heritage Dictionary of the English Language,* 4th Edition (© 2000), *Webster's New International Dictionary*, Unabridged, (Second Edition©1957), *Webster's Third New International Dictionary* (© 1993), *The Oxford English Dictionary* (Second Edition, ©1989), and *The New Century Dictionary* (©2001-2005), all of which are hereby incorporated by this reference for interpretation of terms used herein and to more adequately or aptly describe various features, aspects and concepts shown or otherwise described herein using words having meanings applicable to such features, aspects and concepts.

This document is also premised upon using one or more terms with one embodiment that may also apply to other embodiments for similar structures, functions, features and aspects of the inventions. Wording used in the claims is also descriptive of the inventions, and the text of both Claims and Abstract are incorporated by this reference into the description entirely.

The readers of this document should further understand that the embodiments described herein may rely on terminology and features used in any section or embodiment shown in this document and other terms readily apparent from the drawings and language common or proper therefore.

My invention is for use with a sluice box **100** which is most commonly a rectangular placer mining apparatus having an up-stream first end **101**, an opposing down-stream second end **102**, a first side **103**, a spaced apart second side **104**, a top **105** and an opposing bottom **106**. For optimal performance, the sluice box **100** needs to be positionally supported within a waterway so that water flows along and through the sluice box **100** from the first end **101** to the second end **102** between the first side **103** and the second side **104** and over the top **105**. Such positioning generally requires a dike, or other stable structure, to be constructed within a waterway and the sluice box **100** positioned thereon. Proper angulation of the sluice box **100** within the waterway and proper current flow there-over are critical to the optimum operation of the sluice box **100** and separation of gold from waste materials.

My sluice support generally provides an anchor post **10**, a slide hammer **20**, a first support frame **40** and a second support frame **70** for adjustably and positionally supporting a sluice box **100** with a waterway.

The anchor post **10** is elongate and rod-like in configuration and is preferably formed of steel or a material having similar strength and durability characteristics. The anchor post **10** has a first end **11**, a second end **12** and a length **13** extending between the first end **11** and the second end **12**. The anchor post **10** further has a diameter **14** and an outwardly facing surface **15**. In the preferred embodiment, the anchor post **10** is solid, but it is also contemplated the anchor post may also be tubular and may have a peripheral configuration than cylindrical. In on embodiment the anchor post **10** carries a diametrically enlarged bulb **16** along the length **13** and which may be proximate the second end **12**.

The slide hammer **20** is generally tubular in configuration having an open first end **21** and a closed second end **22** with a length **23** between the open first end **21** and the closed second end **22**. The slide hammer **20** further has a hammer mass **25** and an axially aligned medial channel **26** is defined by the slide hammer **20** and communicates with the open first end **21**. The axially aligned medial channel **26** has an internal diameter **30** and extends partially along the length **23** of the slide hammer **20** from the open first end **21** to a terminal end **24** proximate the closed second end **22**. The hammer mass **25** may be concentrated proximate the closed second end **22** of the slide hammer **20**, such as by having an additional mass located thereat, or thickening the walls thereat, but the hammer mass **25** also includes the entire mass of the slide hammer **20** and is integral with the slide hammer **20**. The axially aligned medial channel **26** has a peripheral configuration that is complementary to the peripheral configuration of the anchor post **10** so that the anchor post **10** is axially and rotatably movable within the medial channel **26**. The length **31** of the medial channel **26** is less than the length **13** of the anchor post **10**. The slide hammer **24** further has an outwardly facing surface **28** extending thereabout.

In one embodiment the slide hammer **20** carries a collar **32** at the open first end **21**. The collar **32** defines an axial medial channel **33** that has a diameter (not shown) that is slightly larger than the diameter **14** of the anchor post **10** but smaller than the diameter (not shown) of the diametrically enlarged bulb **16**. The collar **32** provides a means for retaining the anchor post **10** within the medial channel **23** of the slide hammer **20** to prevent its being lost, and further provides a means to "up-hammer" the slide hammer **20** relative to the anchor post **10** to ease removal of the anchor post **10** from a water-way bed.

As shown in FIG. **3**, the first support frame **40** has a collar **41** that defines a channel **44** extending from a first end **42** to a second end **43** and the collar **41** further has an outer circumferential surface **46** and an inner circumferential surface **45** within the channel **44**. A threaded hole **47** communicates between the outer circumferential surface **46** and the inner circumferential surface **45** and carries a threaded fastener **48** so that the collar **41** may be adjustably positionally secured to the outwardly facing surface **28** of the slide hammer **20** or possibly the outwardly facing surface **15** of the anchor post **10**. An extension arm **51** having a first end **52** and a second end **53** with a length **54** therebetween extends angularly radially from the outer circumferential surface **46** of the collar **41** so that the second end **53** is distal from the collar **41**. In another contemplated embodiment (not shown), the extension arm **51** is telescopingly extendable and collapsible. A cross arm **55** is carried at the second end **53** of the extension arm **51** and is oriented generally perpendicularly to the medial channel **44**. The cross arm **55** has a first end **56** and a second end **57** and defines a medial channel (not shown) extending therethrough so that a width adjustable rod **61** is positionally and adjustably carried within the medial channel at each end **56**, **57**. The width adjustable rod **61** is adjustably telescopingly extendable from the first end **56** and the second end **57** of the cross arm **55** to accommodate varying widths of the sluice box **100**. A threaded hole **59** is defined in the cross arm **55** proximate the first end **56** and proximate the second end **57** to threadably carry a threaded cross arm fastener **60**.

Each width adjustable rod **61** has an end portion (not shown) that is axially inserted into the medial channel defined by the cross arm **55** and an opposing end portion that carries a sluice fastening plate **64**. Each sluice fastening plate **64** defines a fastener hole **65** for a fastener (not shown) to extend therethrough and releasably engage with a side **103**, **104** of the sluice box **100**.

The second support frame **70** has a collar **71** that defines a channel **74** extending from a first end **72** to a second end **73** and the collar **71** further has an outer circumferential surface **76** and an inner circumferential surface **75** within the channel **74**. A threaded hole **77** communicates between the outer circumferential surface **76** and the inner circumferential surface **75** and carries a threaded fastener **78** so that the collar **71** may be adjustably positionally secured to the outwardly facing surface **28** of the slide hammer **20** or possibly the outwardly facing surface **15** of the anchor post **10**. A cross arm **81** is carried on the outer circumferential surface **76** and extends generally perpendicularly to the medial channel **74**. The cross arm **81** has a first end **82** and a second end **83**. In the preferred embodiment, the cross arm **81** is tubular defining a medial channel (not shown) so that a width adjustable rod **87** is positionally and adjustably carried within the medial channel and is adjustably extendable from the first end **82** and the second end **83** of the cross arm **81** to accommodate varying widths of the sluice box **100**. A threaded hole **85** is defined in the cross arm **81** proximate the first end **82** and proximate the second end **83** to threadably carry a threaded cross arm fastener **86**.

Each width adjustable rod **87** has an end portion (not shown) that is axially inserted into the medial channel defined by the cross arm **81** and an opposing end portion that carries a sluice fastening plate **90**. Each sluice fastening plate **90** defines a fastener hole **91** for a fastener (not shown) to extend therethrough and releasably engage with a side **103**, **104** of the sluice box **100**.

Having described the structural my sluice support its operation may be understood.

After a desirable location within a stream, or creek, or waterway has been determined, the operator positions the anchor post **10** generally vertically with the first end **11** resting directly upon the waterway bed preferably between any large rocks and the like so that the anchor post **10** may penetrate the bed surface within the waterway. The slide hammer **20** is axially engaged with the anchor post **10** by inserting the second end **12** of the anchor post **10** into the open first end **21** of the slide hammer **20** so that a portion of the length **13** of the anchor post **10** is within the medial channel **26** defined by the slide hammer **20**.

The slide hammer **20** is reciprocally moved upwardly and forcefully downwardly on the anchor post **10** by the operator so that the slide hammer **20** and the hammer mass **25** pounds/drives the first end **11** of the anchor post **10** into the waterway bed some portion of the length **13** of the anchor post **10**. Once the anchor post **10** is driven vertically into the waterway bed to a desirable depth, the reciprocal movement of the slide hammer **20** thereon is stopped.

The collar **41** of the first support frame **40** is aligned with the slide hammer **20** so that the closed second end **22** of the slide hammer **20** slides into and through the channel **44** defined by the collar **41**. The collar **41** is moved along the length **23** of the slide hammer **20** toward a position somewhat medially between the open first end **21** and the closed second end **22**. Once located at a desired position the collar **41** is positionally secured to the outwardly facing surface **28** of the slide hammer **20**, or the anchor post **10**, by tightening the fastener **48**.

A width adjustable rod **61** is aligned with each of the first end **56** and the second end **57** of the medial channel (not shown) defined by the cross arm **55** carried at the second end of the extension arm **51**. The end portion of each width

adjustable rod **61** not carrying the sluice fastening plate **64** is axially inserted into the medial channel of each end **56**, **57** of the cross arm **55** and each width adjustable rod **61** is positionally secured within the cross arm **55** by tightening the cross arm fasteners **60**. Spacing between the sluice fastener plates **64** should be sufficient to allow the sluice box **100** to be positioned between the two sluice fastening plates **64**.

Thereafter, the collar **71** of the second support frame **70** is aligned with the slide hammer **20** so that the closed second end **22** of the slide hammer **20** slides into and through the channel **74** defined by the collar **71**. The collar **71** is moved along the length **23** of the slide hammer **20** to a position spacedly adjacent the closed second end **22** and spacedly above the first collar **41**. Once located at a desired position, the collar **71** is positionally secured to the outwardly facing surface **28** of the slide hammer **20**, or the anchor post **10**, by tightening the fastener **78**.

A width adjustable rod **87** is aligned with each of the first end **82** and the second end **83** of the medial channel (not shown) defined by the cross arm **81** carried by the collar **71**. The end portion of each width adjustable rod **87** not having the sluice fastening plate **90** is axially inserted into the medial channel of each end **82**, **83** of the cross arm **81** and each width adjustable rod **87** is positionally secured within the cross arm **81** by tightening the cross arm fasteners **86**. The spacing between the sluice fastener plates **90** should be sufficient to allow the sluice box **100** to be positioned between the two sluice fastening plates **90**.

The sluice box **100** is positioned on the sluice support so that the first end **101** of the sluice box **100** is adjacent the second support frame **70** and the two sluice fastening plates **90** carried by the width adjustable rods **87** are positioned adjacent the first side **103** and the second side **104** of the sluice box **100**. Fasteners (not shown) are inserted through the fastener holes **91** defined in the sluice fastening plates **90** to engage with the side portions **103**, **104** of the sluice box **100** to positionally secure the first end **101** of the sluice box **100** to the second support frame **70**.

The width adjustable rods **61** carried by the first support frame **40** cross arm **55** are positionally adjusted relative to the cross arm **55** and the sides **103**, **104** of the sluice box **100** so that fasteners (not shown) may be inserted through the fastener holes **65** defined in the sluice fastening plates **64** to engage with the sluice box **100** sides **103**, **104** to positionally secure the sluice box **100** to the first support frame **40**.

The vertical positions of the first support frame **40** on the slide hammer **20** (or anchor post **10**) and the vertical position of the second support frame **70** on the slide hammer **20** (or anchor post **10**) relative to the level of the water in the waterway are adjusted as desired by loosening and tightening the fasteners **48**, **78** to obtain optimal water flow over and through the sluice box **100**. Increasing the vertical distance between the first collar **41** and the second collar **71** increases the angulation of sluice box **100** from the first end **101** to the second end **102** and decreasing the distance between the collars **41**, **71** similarly reduces the angulation of the sluice box **100**.

The axial rotatable interconnection of the slide hammer **20** on the anchor post **10** allows the sluice box **100** to pivot with the current of the water in the water course to maximize efficiency of the sluice box **100**.

To remove the sluice **100** from the waterway, such as when mining is complete or another location is to be mined, the process described above is generally reversed. If the collar **32** and diametrically enlarged bulb **16** are carried by the slide hammer **20** and anchor post **10** respectively, the slide hammer **20** may be used to "up hammer" the anchor post **10** to ease its removal from the waterway bed.

Various portions and components of the instant invention, including for example, but not limited to, structural components, can be formed by one or more various manufacturing processes known to those in the art.

This disclosure and description has set out various features, functions, methods capabilities, uses and other aspects of my invention. This has been done with regard to the currently preferred embodiments thereof. Time and further development may change the manner in which the various aspects are implemented.

The scope of protection accorded the inventions as defined by the claims is not intended to be limited to the specific sizes, shapes, features or other aspects of the currently preferred embodiments shown and described. The claimed inventions may be implemented or embodied in other forms while still being within the concepts shown, disclosed, described and claimed herein. Also included are equivalents of the inventions which can be made without departing from the scope of concepts properly protected hereby.

Having thusly described and disclosed my Sluice Support I file this Utility Patent Application and pray issuance of Utility Letters Patent.

I claim:

1. A sluice support comprising:

an anchor post having a soil penetrating first end and a second end with a length between the first end and the second end and further having an outer circumferential surface;

a slide hammer axially and rotatably engageable with the anchor post, the slide hammer having an open first end, a closed second end, a length between the open first end and the closed second end, an outwardly facing surface and the slide hammer further defines an axial medial channel communicating with the open first end and extending partially along the length toward the closed second end;

a first support frame having a collar defining a channel through which the slide hammer axially extends, an extension arm extending angularly from the collar and wherein the extension arm has a second end distal from the collar, and a cross arm at the second end, the cross arm having opposing ends and each opposing end is attachable to the sluice to provide support to the sluice; and

a second support frame having a collar defining a channel through which the slide hammer axially extends and a cross arm carried on an outer circumferential surface of the collar extending generally perpendicularly from the collar medial channel, the cross arm having opposing ends and each opposing end is attachable to the sluice to provide support to the sluice proximate the first end of the sluice.

2. The sluice support of claim **1** further comprising:

a fastener carried by the first support frame collar and a fastener carried by the second support frame collar, and wherein the fasteners adjustably positionally secure the first support frame collar and the second support frame collar to the slide hammer.

3. The sluice support of claim **1** wherein the first support frame collar and the second support frame collar engage with the anchor post.

4. The sluice support of claim **3** further comprising:

a fastener carried by the first support frame collar and a fastener carried by the second support frame collar, and

wherein the fasteners positionally secure the first support frame collar and the second support frame collar to the outer circumferential surface of the anchor post.

5. The sluice support of claim **1** wherein the first support frame is adjustably positionable relative to the open first end and closed second end of the slide hammer and the second support frame is adjustably positionable relative to the open first end and closed second end of the slide hammer, and a distance between the first support frame and the second support frame adjusts angulation of the sluice in the waterway and volume of water flowing along and over the sluice.

6. The sluice support of claim **1** wherein the slide hammer is axially rotatable relative to the anchor post.

7. The sluice support of claim **1** wherein the extension arm of the first support frame is axially telescopingly extendable and collapsible.

8. The sluice support of claim **1** further comprising:

a medial channel defined by each cross arm of each support frame, each medial channel communicating between the first end and the second end of each cross arm;

an axially telescoping width adjusting rod carried in the medial channel at each end of each cross arm, each telescoping width adjusting rod having an end that axially engages with the medial channel defined by the cross arm and an opposing end portion carrying a sluice fastening plate; and

a cross arm fastener carried in a threaded hole defined in each cross arm proximate to each end of each cross arm, the cross arm fastener providing a means to positionally secure the telescoping width adjusting rods within the cross arm medial channel.

9. A sluice support comprising:

an anchor post for releasably and adjustably anchoring the sluice support in a waterway, the anchor post having a soil penetrating first end and a second end with a length between the soil penetrating first end and the second end and an outer circumferential surface;

a slide hammer slidably axially engageable with the anchor post, the slide hammer having an open first end, a closed second end, a length between the open first end and the closed second end and a hammer mass at the closed second end, the slide hammer further defining an axially aligned medial channel communicating with the open first end and extending partially along the length toward the closed second end and the hammer mass; and the slide hammer having an outwardly facing surface;

a first support frame positionally engageable with the slide hammer, the first support frame having,

an adjustably positionable collar defining a medial channel through which the slide hammer axially extends, the adjustably positionable collar having an extension arm extending angularly from the collar and wherein the extension arm has a first end communicating with an outer circumferential surface of the collar, and a second end distal from the collar, and

a cross arm carried at the second end of the extension arm, the cross arm having a first end and a second end and defining a medial channel therebetween, the first end and the second end each axially carrying a telescoping width adjustable rod in the medial channel, each width adjustable rod having sluice fastening plate at one end thereof for attachment to opposing sides of the sluice between first and second ends of the sluice, and the cross arm further carrying threaded fasteners to positionally secure the width adjustable rods within the medial channel of the cross arm;

a second support frame adjustably positionally engageable with the slide hammer, the second support frame having an adjustably positionable collar defining a medial channel through which the slide hammer axially extends and wherein the collar has a cross arm carried on an outer circumferential surface of the collar, the cross arm having a first end and a second end and defining a medial channel therebetween the first end and the second end each axially carrying a telescoping width adjustable rod in the medial channel, each width adjustable rod having sluice fastening plate at one end thereof for attachment to opposing sides of the sluice proximate the first end of the sluice, and the cross arm further carrying threaded fasteners to positionally secure the width adjustable rods within the medial channel of the cross arm.

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